

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Accessory Mounting Bracket Bolts	37 N·m	27 lb ft
Camshaft Position Sensor Bolts	12 N·m	106 lb in
Crankshaft Position Sensor Retaining Bolt	6.5 N·m	58 lb in
Electronic Ignition System Ignition Coil Retaining Bolts	10 N·m	89 lb in
Engine Control Module Bolts	4 N·m	35 lb in
Engine Coolant Temperature Sensor Bolt	20 N·m	15 lb ft
Evaporative Emission Canister Flange Bolt	20 N·m	15 lb ft
Evaporative Emission Canister Protective Cover	8 N·m	71 lb in
Evaporative Emission Canister Purge Solenoid Bracket Bolt	5 N·m	44 lb in
Evaporative Emission Vent Solenoid Bolt	8.5 N·m	75 lb in
Exhaust Gas Recirculation Valve Retaining Bolts	30 N·m	22 lb ft
Fuel Filter Mounting Bracket Assembly Bolt	4 N·m	35 lb in
Fuel Pressure Regulator Retaining Screw	12 N·m	106 lb in
Fuel Rail Retaining Bolts	25 N·m	18 lb ft
Fuel Tank Retaining Bolts	20 N·m	15 lb ft
Idle Air Control Valve Retaining Bolts	3 N·m	27 lb in
Knock Sensor Bolt	20 N·m	15 lb ft
Manifold Absolute Pressure Sensor Mounting Bracket Bolt	4 N·m	35 lb in
Manifold Absolute Pressure Sensor Retaining Bolts and Nuts	8 N·m	71 lb in
Oxygen Sensor Bolt	42 N·m	31 lb ft
Rear A/C Compressor Mounting Bracket Bolts	35 N·m	26 lb ft
Spark Plug Cover Bolts	3 N·m	27 lb in
Throttle Body Retaining Nuts	15 N·m	11 lb ft
Throttle Position Sensor Retaining Bolts	2 N·m	18 lb in
Variable Geometry Induction System Solenoid	10 N·m	89 lb in

Engine Mechanical Specifications

Table 1: [Valve Guide Reaming Table](#)

Application	Specification	
	Metric	English
General Data		
• Engine Type	4 Cylinder - In-Line	
• Displacement	1399 cm ³	85.37 in ³
• Bore Stroke	77.9x73.4 mm	3.07x2.89 in
• Compression Ratio	9.5:1	
• Firing Order	1-3-4-2	
• Maximum Power - At 6200 RPM	69 kw/92.5 hp	
• Maximum Torque - At 3400 RPM	130 N·m	95.9 lb ft
Cylinder Bore		
• Diameter	77.9 mm	3.07 in
• Out of Round - Maximum	0.0065 mm	0.00025 in
• Taper - Maximum	0.0065 mm	0.00025 in
Piston		
• Diameter	77.87 mm	3.07 in
• Clearance to Bore	0.020-0.040 mm	0.0008-0.0016 in
Piston Rings		
• Ring, End Gap - Top Compression	0.15-0.3 mm	0.006-0.012 in
• Ring, End Gap - Second Compression	0.3-0.5 mm	0.012-0.019 in
• Groove Clearance - Top Impression	0.05-0.09 mm	0.0019-0.0035 in
• Groove Clearance - Second Compression	0.06-0.01 mm	0.0024-0.0039 in
Piston Pin		
• Diameter	17.990-17.995 mm	0.7083-0.7085 in
• Pin Off-Set	0.7-0.9 mm	0.0276-0.0354 in
Camshaft		
• Lift Intake	7.2 mm	0.283 in
• Lift Exhaust	7.2 mm	0.283 in
• End Play	0.1-0.25 mm	0.0039-0.0079 in
• Journal OD - No. 1	29.935-29.95 mm	1.1785-1.1791 in
• Journal OD - No. 2	26.935-26.95 mm	1.0604-1.0610 in
• Journal OD - No. 3	26.935-26.95 mm	1.0604-1.0610 in
• Journal OD - No. 4	26.935-26.95 mm	1.0604-1.0610 in
• Journal OD - No. 5	26.935-26.95 mm	1.0604-1.0610 in
• Bearing OD - No. 1	30.0-30.021 mm	1.1811-1.1819 in
• Bearing OD - No. 2	27.0-27.021 mm	1.0630-1.0638 in

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• Bearing OD - No. 3	27.0-27.021 mm	1.0630-1.0638 in
• Bearing OD - No. 4	27.0-27.021 mm	1.0630-1.0638 in
• Bearing OD - No. 5	27.0-27.021 mm	1.0630-1.0638 in
Crankshaft		
• Main Journal - Diameter - All	55 mm	2.17 in
• Taper - Maximum	0.005 mm	0.0001 in
• Out of Round - Maximum	0.004 mm	0.0001 in
• Main Bearing Clearance - All	0.026-0.042 mm	0.001-0.00165 in
• Crankshaft End Play	0.1 mm	0.003 in
• Connecting Rod Journal - Diameter - All	43 mm	1.69 in
• Taper - Maximum	0.005 mm	0.00019 in
• Out of Round - Maximum	0.004 mm	0.00015 in
• Rod Bearing Clearance - All	0.019-0.07 mm	0.0007-0.0027 in
• Rod Side Clearance	0.07-0.242 mm	0.0027-0.009 in
Valve Stem		
• Valve Lash Compensators	Hydraulic	
• Face Angle - All	45-45.25 degrees	
• Seat Angle - All	44.5-45 degrees	
• Seat Runout - Maximum, All	0.05 mm	0.0197 in
• Face Runout - Maximum, All	0.03 mm	0.0012 in
• Seat Width - Intake	1.17-1.57 mm	0.0461-0.0618 in
• Seat Width - Exhaust	1.4-1.8 mm	0.055-0.071 in
• Valve Guide Inside Diameter - All	6-6.02 mm	0.236-0.237 in
• Valve Stem Diameter - Intake	5.955-5.97 mm	0.234-0.235 in
• Valve Stem Diameter - Exhaust	5.935-5.95 mm	0.2336-0.2342 in
• Valve Diameter - All - Intake	28.57 mm	1.125 in
• Valve Diameter - Exhaust	27.24 mm	1.074 in
• Valve Spring Loads - Valve Open	551-609 N·m	405-447 lb ft
• Valve Spring Loads - Valve Closed	247-273 N·m	181-200 lb ft
Lubricating Type	Forced Feed	
Oil Filter Type	Cartridge (Full Flow)	
Oil Pan Capacity Including Oil Filter	3.75 liter	4 quarts
Oil Pump		
• Gap Between Oil Pump Body and Out Rotor	0.4-0.484 mm	0.0157-0.0191 in
• Out Rotor Side Clearance	0.045-0.1 mm	0.0018-0.0039 in
• Inner Rotor Side Clearance	0.035-0.085 mm	0.0014-0.0033 in
• Relief Valve Spring Free Length	81 mm	3.2 in
Oil Pump Type	Rotary (Trochoid)	

Valve Guide Reaming Table

Size	Reamer	Production Code	Service Code

Normal	--	--	K
0.075	KM-805	1	K1
0.150	--	2	K2